Teacher Incentive Fund (TIF) 3 Kick-off Grantee Meeting

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Topics for Today

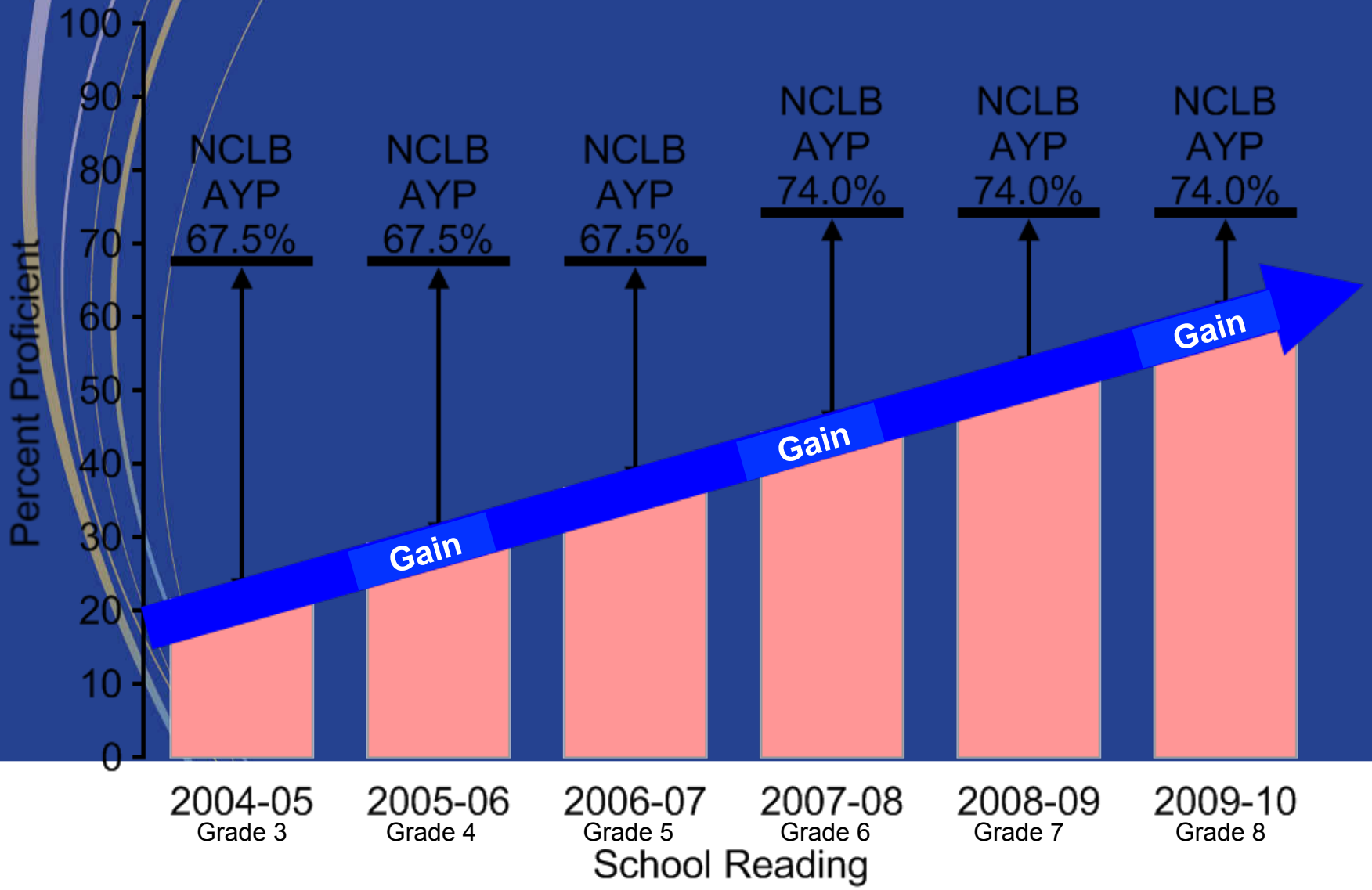
- Introduction to Measures
  - Attainment / Gain / Value-Added
- Value-Added Models
  - Definition
  - Best Practices
  - Measuring Knowledge
  - Levels of Analysis
  - Value-Added and Attainment
  - Model Features
- Value-Added and TIF

Attainment and Gain

- Attainment – a "point in time" measure of student proficiency
  - compares the measured proficiency rate with a predefined proficiency goal.

- Gain – measures average gain in student scores from one year to the next

Attainment versus Gain



Growth: Starting Point Matters

Reading results of a cohort of students at two schools

School	2006 Grade 4 Scale Score Avg.	2007 Grade 5 Scale Score Avg.	Average Scale Score Gain
A	455	465	10
B	425*	455*	30

Grade 4 Proficient Cutoff 438
Grade 5 Proficient Cutoff 463
*Scale Score Average is below Proficient

Example assumes beginning of year testing

Value-Added

- A kind of growth model that measures the contribution of schooling to student performance on standardized tests
- Uses statistical techniques to separate the impact of schooling from other factors that may influence growth
- Focuses on how much students improve on the tests from one year to the next as measured in scale score points

Value-Added Model Definition

- A value-added model (VAM) is a quasi-experimental statistical model that yields estimates of the contribution of schools, classrooms, teachers, or other educational units to student achievement, controlling for non-school sources of student achievement growth, including prior student achievement and student and family characteristics.
- A VAM produces estimates of productivity under the counterfactual assumption that all schools serve the same group of students. This facilitates apples-to-apples school comparisons rather than apples-to-oranges comparisons.
- The objective is to facilitate valid and fair comparisons of productivity with respect to student outcomes, given that schools may serve very different student populations.

A More Transparent (and Useful) Definition of VA

- Value-added productivity is the difference between actual student achievement and predicted student achievement.

- Or, value-added productivity is the difference between actual student achievement and the average achievement of a comparable group of students (where comparability is defined by a set of characteristics such a prior achievement, poverty and ELL status).

Value-Added Best Practices

- Development and implementation of a value-added system should be structured as a continuous improvement process that allows for full participation of stakeholders
- Model Co-Build; Complete customization
  - Analysis
  - Reporting

Value–added is one tool in a toolbox with multiple indicators

Measuring knowledge

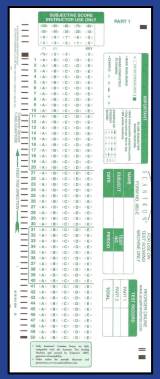
- Many factors influence what students learn and how their knowledge is measured
- A variety of measures, including (but not limited to) assessments, tell us what a student knows at a point in time.
- What are some ways we measure knowledge?

Measuring knowledge

Large scale assessments

MAP

WKCE



Local assessments used by the district

Diagnostic Test

DIBELS
Nonsense Work Fluency

Probe 1 - Examiner Copy

~~koy~~	sim	uk	~~beg~~	naf	10 / 14
mik	lut	~~hil~~	fer	~~xel~~	13 / 15
~~dap~~	nek	kog	~~zim~~	ret	10 / 15
jom	fom	neb	vum	gim	____ / 15
et	zik	dij	fek	pol	____ / 14
kej	rit	jul	bec	waz	____ / 15

Total correct letter sounds (CLS): 33

Total words recoded completely and correctly (WRC): 5

Error Pattern:

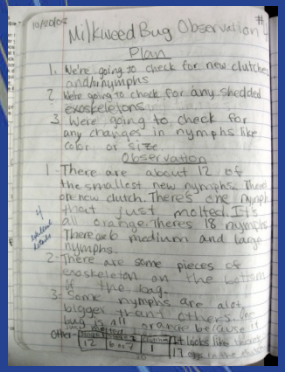
frequently confuses b, d, and p.

need more instruction on those letter sounds

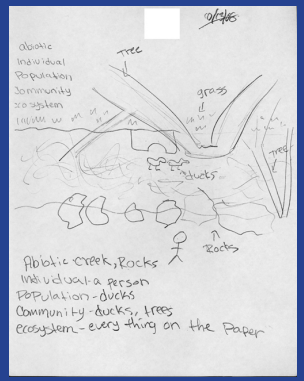
End-of-course Exam

Daily teacher assessments

Daily Journal



Unit Project



Observations

After-school Activities

Hands-on Project

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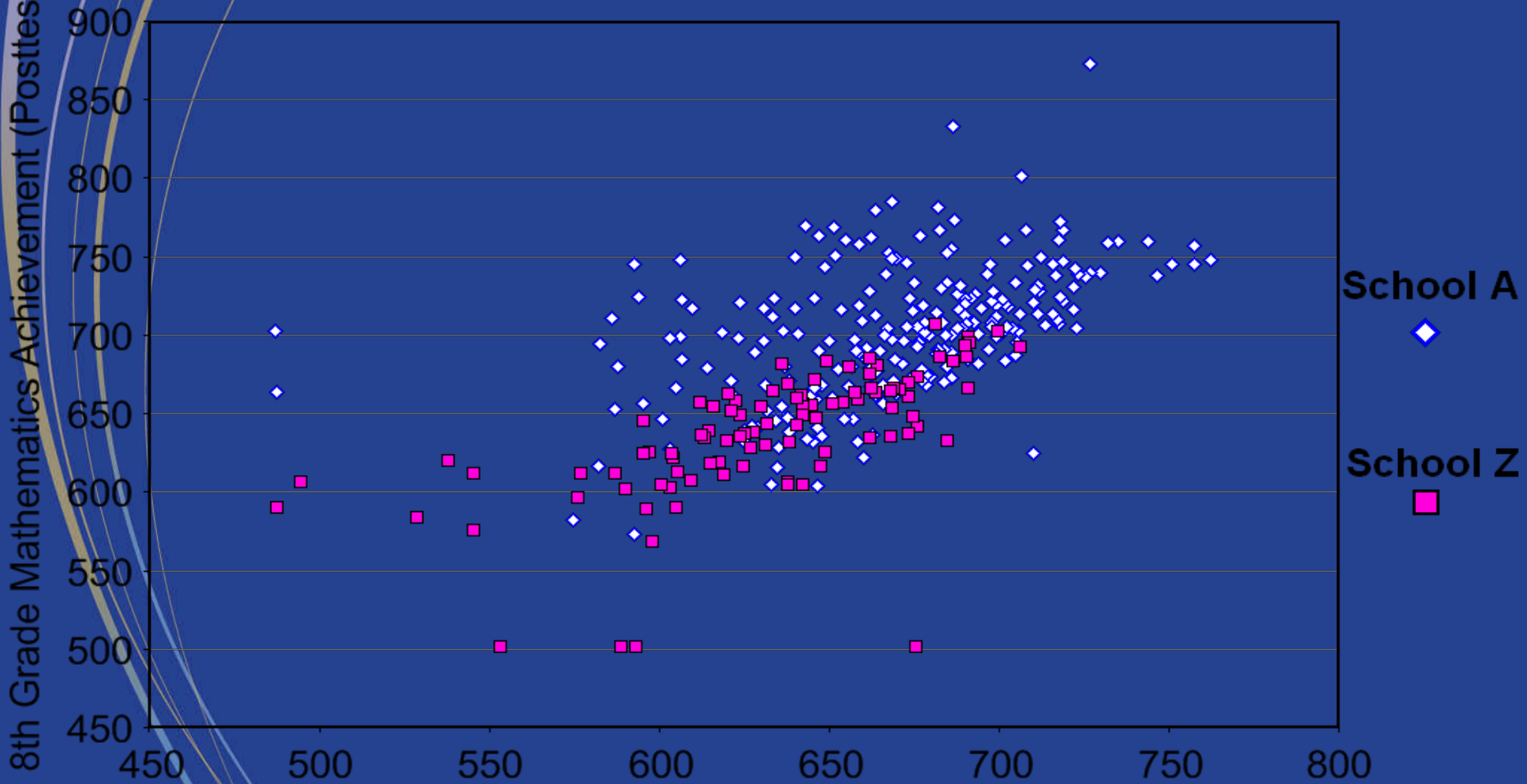
Value-Added Levels of Analysis

- Value-Added Levels
  - Teacher
  - Classroom
  - Grade
  - School
  - School Groupings (Sub-Districts)
  - District

A Graph of Student Achievement Data for Two Schools



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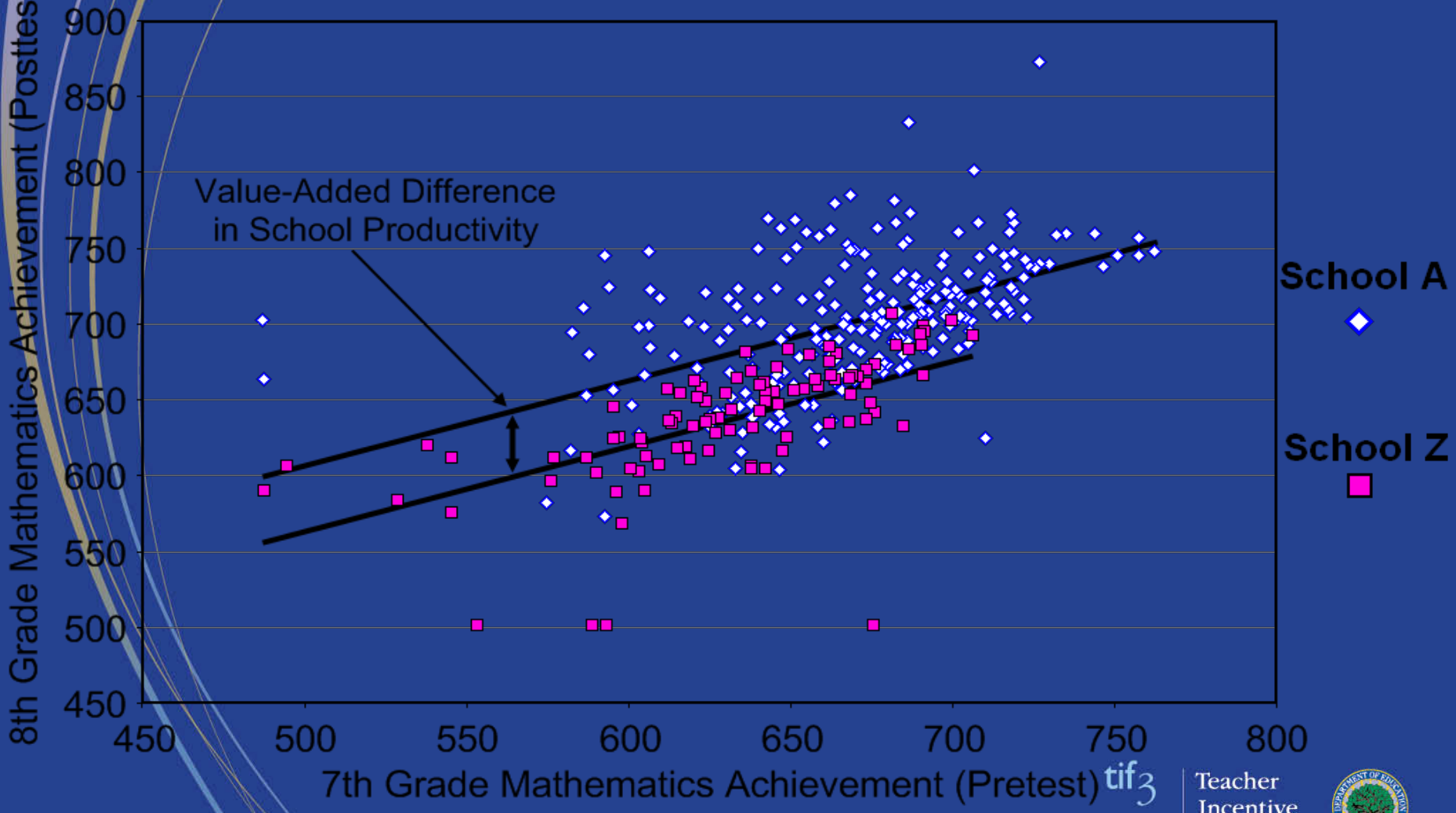

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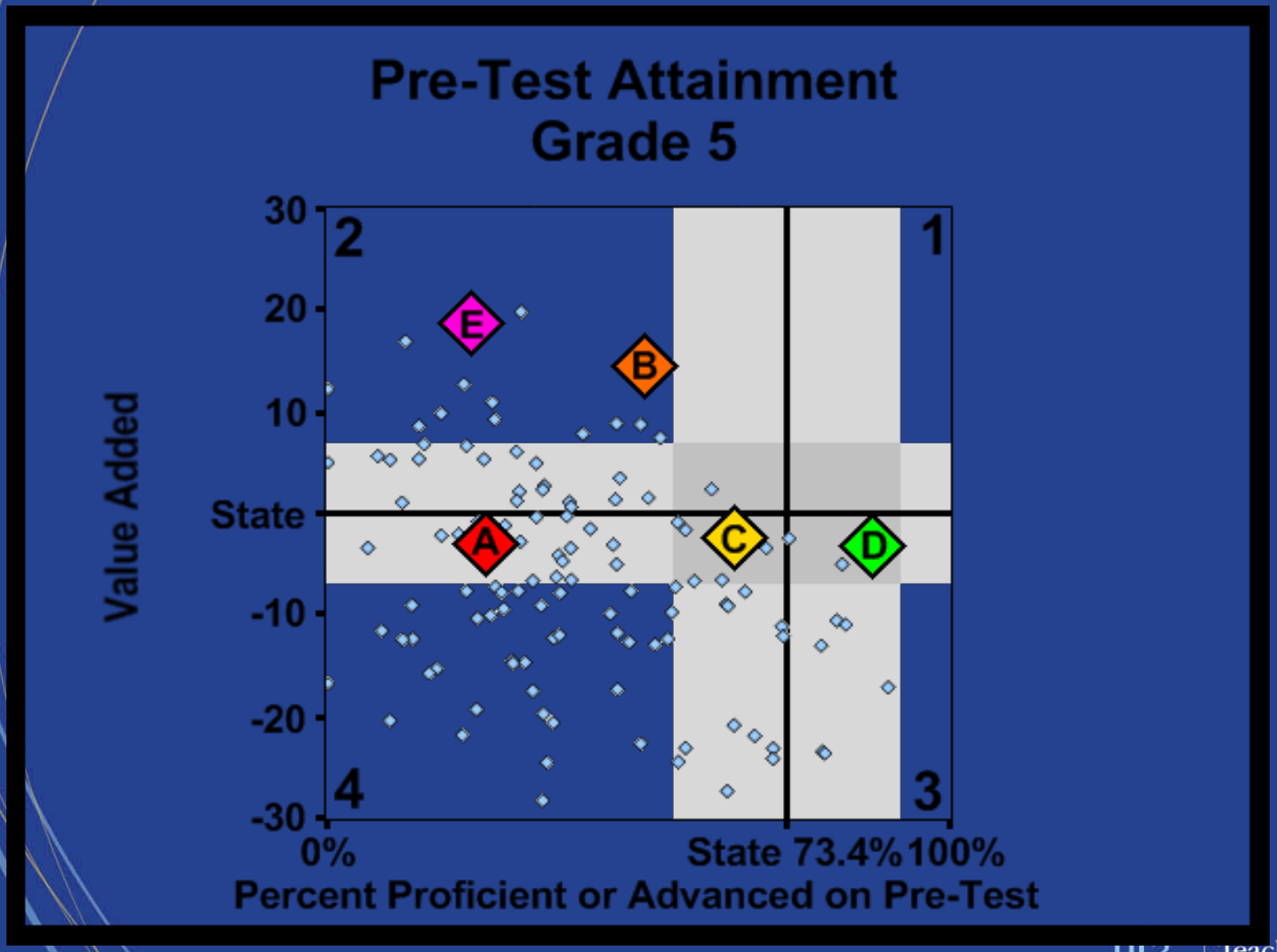
Attainment and Value-Added



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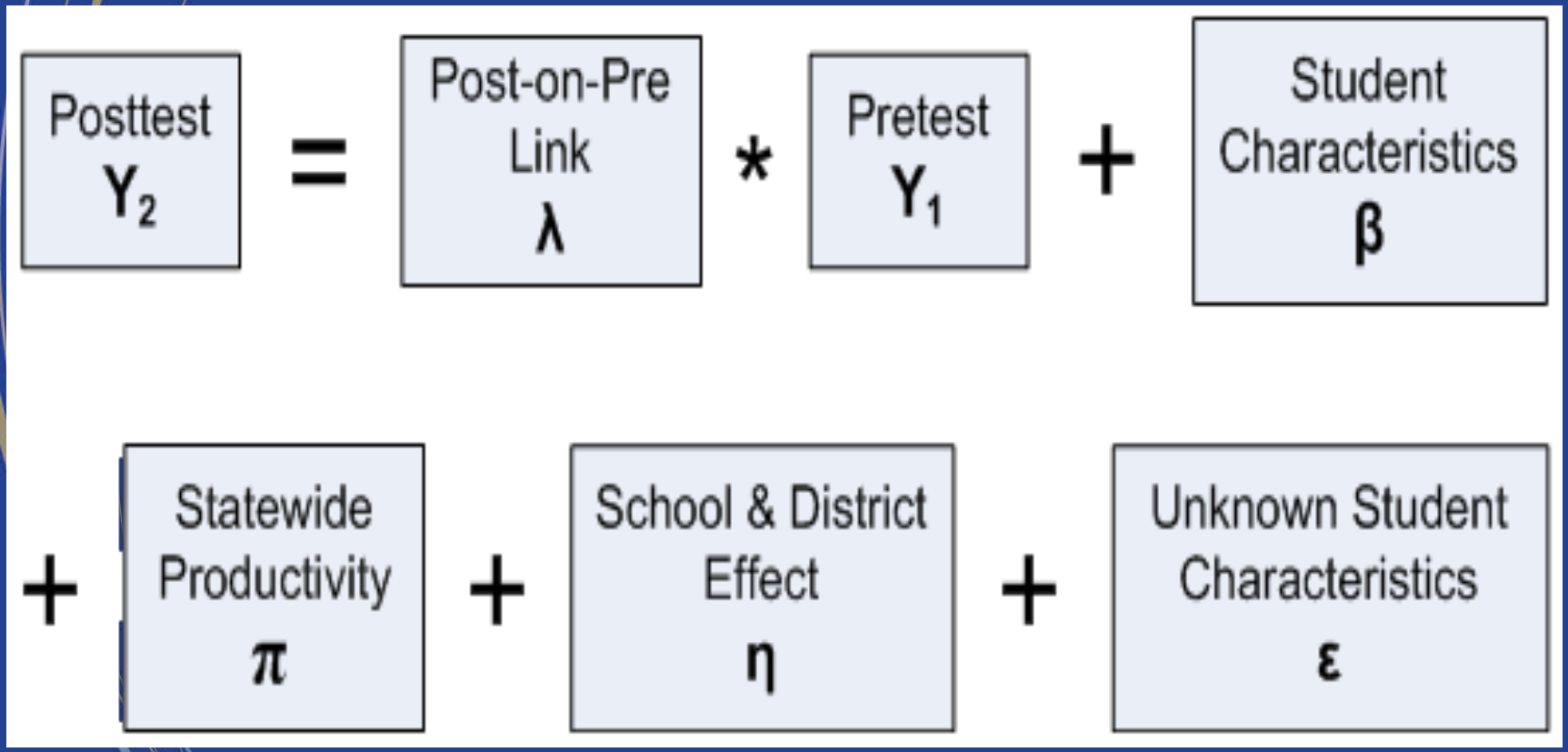
How complex should a value-added model be?

- Rule: "Simpler is better, unless it is wrong.“
- Implies need for “quality of indicator/ quality of model” diagnostics.

Model Features

- Demographics
- Posttest on pretest link
- Measurement error
- Student mobility: dose model
- Classroom vs. teacher: unit vs. agent
- Differential effects
- Selection bias mitigation: longitudinal data
- Test property analysis

A Simple Two-Period VA Model of Total Productivity



Value-Added and TIF

- Lessons Learned with TIF Sites
  - Determining Most Appropriate Model
  - Communication / Stakeholder Engagement
  - One Measure of Effectiveness

Contact Information

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An animated version of this presentation is available online at
http://varc.wceruw.org/tutorials/Oak/index.htm